SMD Varistors

Monolithic; Standard Series

SMD

Construction

- Cylindrical varistor element, encapsulated
- Encapsulation: thermoplast, flame-retardant to UL 94 V-0
- Termination: tinned copper alloy

Features

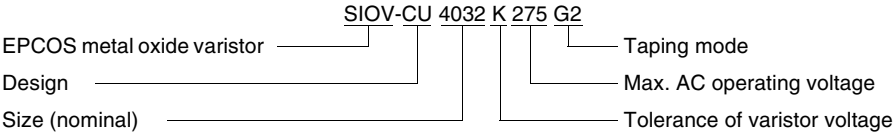
- Electrical equivalents to leaded types SIOV-S05/S07 up to 460 V_{RMS}
- Good solderability
- PSpice models
- Approvals: UL (all types) and CSA (≥ K130)

Taping

- Supply on 8/12-mm tape, for tape dimensions see pages 154/155, for reel dimensions and packing units see page 157, chapter *"SMD Varistors: Taping"*

Type designation

Detailed description of coding system on page 39, chapter *"General Technical Information"*



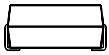
General technical data

Climatic category LCT UCT Damp heat, steady state (93 % r.h., 40 °C)	40/85/56 – 40 °C + 85 °C 56 days	in accordance with IEC 60068-1 in accordance with IEC 60068-2-3
Operating temperature	– 40 … + 85 °C	in accordance with CECC 42 000
Storage temperature	– 40 … + 125 °C	
Electric strength	≥ 2,5 kV_{RMS}	in accordance with CECC 42 000
Insulation resistance	≥ 1,0 GΩ	in accordance with CECC 42 000
Response time	< 10 ns	
Solderability	235 °C, 2 s	in accordance with IEC 60068-2-58
Resistance to soldering heat	260 °C, 10 s	in accordance with IEC 60068-2-20

Note: Contact EPCOS for consultancy if solvents on water-base are used for cleaning.

Maximum ratings (T_A = 85 °C)

Type	Ordering code	V_{RMS}	V_{DC}	i_{max} 8/20 µs	W_{max} (2 ms)	P_{max}
SIOV-		V	V	A	J	W
CU3225K11G2	B72650M0110K072	11	14	100	0,3	0,01
CU4032K11G2	B72660M0110K072	11	14	250	0,8	0,02
CU3225K14G2	B72650M0140K072	14	18	100	0,4	0,01
CU4032K14G2	B72660M0140K072	14	18	250	0,9	0,02
CU3225K17G2	B72650M0170K072	17	22	100	0,5	0,01
CU4032K17G2	B72660M0170K072	17	22	250	1,1	0,02
CU3225K20G2	B72650M0200K072	20	26	100	0,6	0,01
CU4032K20G2	B72660M0200K072	20	26	250	1,3	0,02
CU3225K25G2	B72650M0250K072	25	31	100	0,7	0,01
CU4032K25G2	B72660M0250K072	25	31	250	1,6	0,02
CU3225K30G2	B72650M0300K072	30	38	100	0,9	0,01
CU4032K30G2	B72660M0300K072	30	38	250	2,0	0,02
CU3225K35G2	B72650M0350K072	35	45	100	1,1	0,01
CU4032K35G2	B72660M0350K072	35	45	250	2,5	0,02
CU3225K40G2	B72650M0400K072	40	56	100	1,3	0,01
CU4032K40G2	B72660M0400K072	40	56	250	3,0	0,02
CU3225K50G2	B72650M0500K072	50	65	400	1,8	0,10
CU4032K50G2	B72660M0500K072	50	65	1200	4,2	0,25
CU3225K60G2	B72650M0600K072	60	85	400	2,2	0,10
CU4032K60G2	B72660M0600K072	60	85	1200	4,8	0,25
CU3225K75G2	B72650M0750K072	75	100	400	2,5	0,10
CU4032K75G2	B72660M0750K072	75	100	1200	5,9	0,25
CU3225K95G2	B72650M0950K072	95	125	400	3,4	0,10
CU4032K95G2	B72660M0950K072	95	125	1200	7,6	0,25
CU3225K115G2	B72650M0111K072	115	150	400	3,6	0,10
CU4032K115G2	B72660M0111K072	115	150	1200	8,4	0,25
CU3225K130G2	B72650M0131K072	130	170	400	4,2	0,10
CU4032K130G2	B72660M0131K072	130	170	1200	9,5	0,25
CU3225K140G2	B72650M0141K072	140	180	400	4,5	0,10
CU4032K140G2	B72660M0141K072	140	180	1200	10,0	0,25

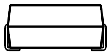


Characteristics (T_A = 25 °C)

Type	V_v (1 mA)	ΔV_v (1 mA)	Max. clamping voltage		C_{typ} (1 kHz)	Derating curve	*V/I* characteristic
			v	*i*			
SIOV-	V	%	V	A	pF	Page	Page
CU3225K11G2	18	± 10	36	1,0	1750	246	274
CU4032K11G2	18	± 10	36	2,5	2750	246	275
CU3225K14G2	22	± 10	43	1,0	1450	246	274
CU4032K14G2	22	± 10	43	2,5	2300	246	275
CU3225K17G2	27	± 10	53	1,0	1200	246	274
CU4032K17G2	27	± 10	53	2,5	1900	246	275
CU3225K20G2	33	± 10	65	1,0	980	246	274
CU4032K20G2	33	± 10	65	2,5	1600	246	275
CU3225K25G2	39	± 10	77	1,0	850	246	274
CU4032K25G2	39	± 10	77	2,5	1400	246	275
CU3225K30G2	47	± 10	93	1,0	720	246	274
CU4032K30G2	47	± 10	93	2,5	1200	246	275
CU3225K35G2	56	± 10	110	1,0	620	246	274
CU4032K35G2	56	± 10	110	2,5	1050	246	275
CU3225K40G2	68	± 10	135	1,0	520	246	274
CU4032K40G2	68	± 10	135	2,5	900	246	275
CU3225K50G2	82	± 10	135	5,0	300	247	274
CU4032K50G2	82	± 10	135	10,0	530	247	275
CU3225K60G2	100	± 10	165	5,0	250	247	274
CU4032K60G2	100	± 10	165	10,0	480	247	275
CU3225K75G2	120	± 10	200	5,0	210	247	274
CU4032K75G2	120	± 10	200	10,0	430	247	275
CU3225K95G2	150	± 10	250	5,0	135	247	274
CU4032K95G2	150	± 10	250	10,0	260	247	275
CU3225K115G2	180	± 10	300	5,0	110	247	274
CU4032K115G2	180	± 10	300	10,0	220	247	275
CU3225K130G2	205	± 10	340	5,0	100	247	274
CU4032K130G2	205	± 10	340	10,0	200	247	275
CU3225K140G2	220	± 10	360	5,0	95	247	274
CU4032K140G2	220	± 10	360	10,0	180	247	275

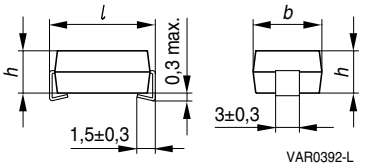
Maximum ratings (T_A = 85 °C)

Type	Ordering code	V_{RMS}	V_{DC}	i_{max} 8/20 µs	W_{max} (2 ms)	P_{max}
SIOV-		V	V	A	J	W
CU3225K150G2	B72650M0151K072	150	200	400	4,9	0,10
CU4032K150G2	B72660M0151K072	150	200	1200	11,0	0,25
CU3225K175G2	B72650M0171K072	175	225	400	5,6	0,10
CU4032K175G2	B72660M0171K072	175	225	1200	13,0	0,25
CU3225K230G2	B72650M0231K072	230	300	400	7,2	0,10
CU4032K230G2	B72660M0231K072	230	300	1200	17,0	0,25
CU3225K250G2	B72650M0251K072	250	320	400	8,2	0,10
CU4032K250G2	B72660M0251K072	250	320	1200	19,0	0,25
CU3225K275G2	B72650M0271K072	275	350	400	8,6	0,10
CU4032K275G2	B72660M0271K072	275	350	1200	21,0	0,25
CU3225K300G2	B72650M0301K072	300	385	400	9,6	0,10
CU4032K300G2	B72660M0301K072	300	385	1200	23,0	0,25
CU4032K460G2	B72660M0461K072	460	615	1000	36,0	0,25



Characteristics (T_A = 25 °C)

Type	V_v (1 mA)	ΔV_v (1 mA)	Max. clamping voltage		C_{typ} (1 kHz)	Derating curve	*V/I* characteristic
			v	*i*			
SIOV-	V	%	V	A	pF	Page	Page
CU3225K150G2	240	± 10	395	5,0	90	247	274
CU4032K150G2	240	± 10	395	10,0	170	247	275
CU3225K175G2	270	± 10	455	5,0	75	247	274
CU4032K175G2	270	± 10	455	10,0	150	247	275
CU3225K230G2	360	± 10	595	5,0	60	247	274
CU4032K230G2	360	± 10	595	10,0	115	247	275
CU3225K250G2	390	± 10	650	5,0	55	247	274
CU4032K250G2	390	± 10	650	10,0	105	247	275
CU3225K275G2	430	± 10	710	5,0	50	247	274
CU4032K275G2	430	± 10	710	10,0	95	247	275
CU3225K300G2	470	± 10	775	5,0	45	247	274
CU4032K300G2	470	± 10	775	10,0	90	247	275
CU4032K460G2	750	± 10	1240	10,0	55	upon request	275

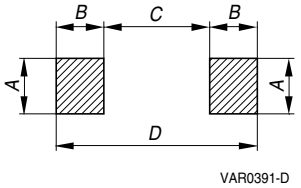


Weight:
CU3225: approx. 0,5 g
CU4032: approx. 0,8 g

Dimensions

Type	*l* mm	*b* mm	*h* mm
SIOV-CU3225K11…175	8,0 ± 0,3	6,3 ± 0,3	3,2 ± 0,3
SIOV-CU3225K230…300	8,0 ± 0,3	6,3 ± 0,3	4,5 ± 0,3
SIOV-CU4032K11…175	10,2 ± 0,3	8,0 ± 0,3	3,2 ± 0,3
SIOV-CU4032K230…460	10,2 ± 0,3	8,0 ± 0,3	4,5 ± 0,3

Termination: tinned copper alloy



Recommended solder pad layout

Type	*A* mm	*B* mm	*C* mm	*D* mm
SIOV-CU3225K11…175	3,5	2,8	4,5	10,1
SIOV-CU3225K230…300	3,5	2,8	4,5	10,1
SIOV-CU4032K11…175	3,5	2,8	6,5	12,1
SIOV-CU4032K230…460	3,5	2,8	6,5	12,1

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